

ABSTRACT

The present inventions provide methods and systems for reducing the peak to average power ratio of a multi-channel block of QAM signals. Reducing the peak to average power ratio of a signal ensures that amplifiers and transmitters are not saturated, causing loss of data, and reducing spatter to adjacent channels. Further, reducing peak to average power ratios reduces the consumption of power during transmission. The reduction is obtained by providing a symbol delay on one or more of the QAM signals prior to the signals being summed where the delay is computed such that peak QAM power transitions in the QAM signals statistically do not align in time. The delay is arranged according to the equation: the additional delay for each QAM signal is equal to the symbol rate of the QAM signals divided by the number of QAM signals in summation.